In the Claims

1. (Currently Amended) A pre-subject filter ~~having variable attenuation in two dimensions~~ for a radiographic imaging system, the filter comprising:

a first end having a first attenuation profile;

a second end having a second attenuation profile, the second attenuation profile being larger than the first attenuation profile; and

a body connecting the first end and the second end, the body having variable attenuation characteristics in at least two orthogonal cross-sections.

2. (Original) The filter of claim 1 wherein the first end further includes a filtering width narrower than a filtering width of the second end.

3. (Original) The filter of claim 1 wherein the body has an attenuation profile such that the attenuation power decreases continuously from the first end to the second end.

4. (Currently Amended) The filter of claim 1 having a U-shaped cross-section.

5. (Original) The filter of claim 1 being translated in at least one of a z-axis and a transverse axis of a CT system.

6. (Original) A CT system comprising:

rotatable gantry having an opening defining a scanning bay;

a movable table configured to translate a subject to be scanned along a first axis within the scanning bay;

an x-ray projection source configured to project x-rays projected toward the subject;

a pre-subject filter to filter x-rays projected toward the subject, the filter having a variable attenuation profile; and

a computer programmed to:

determine an attenuation pattern of the subject;

translate the filter along the first axis as a function of the attenuation pattern of the subject; and

acquire imaging data of the subject.

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7. (Original) The CT system of claim 6 wherein the computer is further programmed to translate the filter in a transverse direction as a function of the attenuation pattern of the subject.

8. (Original) The CT system of claim 7 wherein the computer is further programmed to position the filter as a function of the attenuation pattern of the subject to reduce radiation exposure to dose reduction regions of the subject.

9. (Original) The CT system of claim 8 wherein the dose reduction regions include anatomical regions sensitive to radiation.

10. (Original) The CT system of claim 6 wherein the computer is further programmed to determine the attenuation pattern of the subject from a set of patient projections.

11. (Original) The CT system of claim 6 wherein the computer is further programmed to move the filter as a function of gantry rotation.

12. (Currently Amended) A method of diagnostic imaging comprising the steps of:

positioning a subject to be scanned into a scanning bay;

projecting a radiation beam along a beam path toward the subject;

positioning a filter in the beam path, the filter having variable attenuation ~~in the beam path~~parallel to a subject's long axis;

translating the filter ~~in at least one direction~~parallel to the subject's long axis to reduce radiation exposure to sensitive anatomical regions of the subject;

acquiring imaging data of the subject; and

reconstructing an image of the subject from the imaging data.

13. (Original) The method of claim 12 wherein the filter includes:

a first end having a first attenuation profile;

a second end having a second attenuation profile, the second attenuation profile being greater than the first attenuation profile; and

a body connecting the first end and the second end.

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14. (Original) The method of claim 13 wherein the first end has a filtering width narrower than a filtering width of the second end.

15. (Original) The method of claim 13 wherein the body has a variable attenuation profile that varies continuously along a length of the body from the first end to the second end.

16. (Original) The method of claim 13 wherein the body has a width that tapers from the second end to the first end.

17. (Original) The method of claim 16 wherein the attenuation profile of the body varies non-linearly across any given constant width of the body.

18-20 (Cancelled)

21. (Currently Amended) A radiographic imaging system comprising:

a scanning bay;

a movable table configured to move a subject to be scanned fore and aft along a first direction within the scanning bay;

an x-ray projection source configured to project x-rays in an x-ray beam toward the subject;

a pair of cam filters formed of attenuating matter, wherein each cam filter has a length and an attenuation profile that varies as a function of filter length and wherein the attenuation profile of each filter is a function of filter thickness; and

a computer programmed to:

determine a region-of-interest of the subject;

position the pair of cam filters to limit x-ray exposure outside the region-of-interest; and

~~The radiographic imaging system of claim 20 wherein the computer is further programmed to~~ -translate at least one of the filters in the first direction to either increase or decrease x-ray exposure to the region of interest.

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22. (Currently Amended) The radiographic imaging system of claim ~~18~~ 21 wherein the pair of cam filters is oriented in an x-axis.

23. (Currently Amended) The radiographic imaging system of claim ~~18~~ 21 wherein each cam filter has an elliptical shape.

24. (Currently Amended) The radiographic imaging system of claim ~~18~~ 21 wherein the computer is further programmed to decrease a space between the pair of filters to narrow the x-ray beam and increase the space between the pair of filters to widen the x-ray beam.

25. (Currently Amended) A cam filter assembly for use with a radiation emitting imaging system, the cam filter assembly including a pair of non-overlapping cam filters wherein each cam filter has an attenuation power that varies with thickness of the filter, the pair of cam filters being configured to operate in tandem to manipulate a beam of radiation projected toward a subject to ~~limit radiation exposure to~~generate a desired radiation profile across a region-of-interest of the subject.

26. (New) The cam filter assembly of claim 25 wherein each filter has a width situated along an x-axis and a length situated along a z-axis, the z-axis being parallel to a long axis of the subject, and wherein each filter has varying attenuation characteristics along its length.

27. (New) The cam filter assembly of claim 25 wherein each filter has a generally rod-shaped body.

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